

*CONTEMPORARY SHORELINE CHANGE: MISSISSIPPI DELTA AREA*

Sherwood M. Gagliano, William G. Smith, and Johannes L. van Beek<sup>1</sup>

*ABSTRACT*

Several decades of continually high rates of erosion of the deltaic shore of Louisiana indicate a reversal of the long-term trends of Mississippi Delta progradation. Much of this change is undoubtedly induced by the increasing artificiality of the Mississippi River system. Not only has the suspended matter in transport by the river diminished by a substantial amount, but the distribution of these sedimentary materials has also been restricted, primarily through flood control works. Much of the sedimentary material that was formerly widely dispersed over the coastal zone, causing compensatory aggradation against relatively rapid rates ( $> 1$  m/100 yrs) of submergence which prevail over the area, now is delivered to deep water off of the presently active delta or is accumulated as fill in the Atchafalaya Floodway.

A major part of the disintegration of the deltaic plain is due to other human action. Numerous rig location canals, oil and gas pipeline canals, and navigation channels have profoundly altered the natural hydrography. These activities have destroyed marshes due to the introduction of highly saline water, excessive flooding of marshes, over-drainage and oxidation of organic soils, or impoundment from carelessly placed spoil.

At the seaward extremity of the broad marshes of the deltaic plain are the sandy barrier islands, which are long-term accumulations of the coarser materials winnowed from eroding deltaic sediments. These islands also are affected by subsidence, deprivation of new sand supplies from the river, and the disintegration of the marsh areas behind them. Through time, the islands are known to migrate alongshore and landward, and many are known to be diminishing in size. Such changes may be dramatic after hurricanes which may cause more modification than several years of "normal" conditions.

The rapid deterioration of the Mississippi Delta system is a result of past failure to understand the natural dynamics of the deltaic plain and of continued reluctance to initiate remedial measures.

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<sup>1</sup>Coastal Environments, Inc., Baton Rouge, Louisiana